# The UCB Chiapas Plant Collection: Conservation and Public Education

*Robert Ornduff*

In the early 1980s, the Botanical Garden of the University of California at Berkeley received a gift of wild-collected seeds and cuttings of 250 species of plants native to the montane regions of Chiapas, the southernmost state of Mexico. The material had been collected by Dr. Dennis Breedlove, curator of the herbarium of the California Academy of Sciences and director of the ongoing Flora of Chiapas project. Many of the species Breedlove gave to the Garden represent those on the verge of extinction,

**Only 2 or 3 *Magnolia sharpii* trees are now known in the wild, but 5 are in cultivation at the UCB Botanical Garden. Photo by H. Forbes.**

others are plants of unusual botanical interest, and still others are species unknown in cultivation but of considerable horticultural potential as ornamentals.

As a resident of the San Francisco Bay Area, a former Botanical Garden staff member and a knowledgeable horticulturist, Breedlove selected plants that he believed would succeed in the cool, mild climate of the Berkeley hills where the Botanical Garden is situated. In general his choices have done well there.

The Garden's administrative staff realized that this windfall provided the basis for developing a marvellous collection of Mexican plants of unparalleled diversity. When the Garden received the plants, there was little space available for them in the small area devoted to Mexican plants, and thus they were placed in containers until a new site could be prepared. We agreed that the placement of the plants should convey a particular set of interpretive themes, and an advisory committee was formed to guide the project. That committee consists of key Garden staff members and Drs. Frank Almeda, Dennis Breedlove and Thomas Daniel, all botanists at the California Academy of Sciences who are familiar with the flora of Chiapas, and Dr. Brent Berlin of the Department of Anthropology of the UC Berkeley campus, who has a long-time interest and expertise in the ethnology of the Mayan peoples of the Chiapas highlands.

The group decided that the plantings in the new Mesoamerican area (as it is formally designated) should emphasize three themes: conservation of biodiversity in Third World countries; the ethnobotany of the Maya, with emphasis on plants used medicinally; and display of

**The taller tree in the center of photo is *Chiranthodendron pentadactylon*. *Bidens ostruthioides* is seen at the bottom left and *Pinus ayacahuite* appears at the right. Photo by R. Anderson.**

species unknown to California horticulture, but of considerable potential as ornamentals.

The Mesoamerican project is one of the most ambitious developments undertaken at the Botanical Garden in recent years. The previously undeveloped hillside site occupies about three acres, or approximately ten percent of the Garden's total area. In order to accommodate access by visitors, the cyclone fence marking the garden boundary had to be moved to include areas that are relatively flat. Then began the arduous task of removing the vegetation and debris that had accumulated on the site. Coyote brush (*Baccharis pilularis*) had taken over much of the terrain, along with miscellaneous escapees from the Garden's collection (most notably several large specimens of the South American tree tobacco *Nicotiana setchellii*, doubtless originating from plants grown by long-time garden director T. Harper Goodspeed, a student of the evolution and systematics of *Nicotiana*). Tangles of vicious wild blackberries and poison oak covered much of the site, and even a few large California live oaks (*Quercus agrifolia*) had to be removed to make space for the small plants that were later set out on the site.

## Conservation of Third World Biodiversity

The Mayan people have occupied the Chiapas highlands for many millenia, and through time the population numbers have increased. One consequence of this is that to gain additional crop or grazing land or to provide charcoal, which is their major fuel, the Mayans have cut forested areas that were once nearly inaccessible. Such practices undoubtedly have already resulted in the extinction of many plant species, and others are on the brink of extinction. An example of the latter is the recently discovered large-leaved *Magnolia sharpii*, now known in the wild as a population of only two or three trees. The Botanical Garden has five individuals of this species in cultivation. These and several other threatened species in our Mesoamerican collection will be identified by specially marked labels. Docent-led tours of the Garden will further emphasize the Garden's commitment to the preservation of rare and endangered species and to educating the public about the value of preserving, in situ, a significant component of the biological heritage of humankind.

The Botanical Garden is a member of the Center for Plant Conservation, which focuses on the flora of the

United States, but we believe that our mission in conservation education should reflect the cosmopolitan scope of the Garden's collections of about 12,000 species.

## Ethnobotany of the Maya of Chiapas

After many years of extensive study of Mayan ethnobotany, Dr. Berlin and his colleagues have compiled a list of approximately 1,650 species of Chiapas plants that are used medicinally by the highland Maya. Treating 14 major health conditions, the pharmacopeia compiled by the Mayans is one of the largest of any known for a pre-Columbian culture. In addition, these people employ a complex taxonomy of their flora which offers a fascinating contrast to the European tradition of Linnaean taxonomy.

Those plants of major medicinal importance will be identified with special labels indicating not only the name of the plant but its application as well. This collection will serve as an educational resource for the community at large, and will underscore the Garden's increasing attempts to recognize the ethnic diversity that occurs in the communities it serves.

## Species of Horticultural Potential

A third focus of the Mesoamerican area is to display plants of potential horticultural value. The Garden has already established a good working relationship with the California Association of Nurserymen, whose members are always seeking new materials for introduction into the trade.

*Magnolia sharpii*, mentioned earlier, is a tree with large leaves and attractive white scented flowers. It has considerable ornamental possibilities, and the fact that our trees have already flowered suggests that this species should do well in private or public gardens in the area. Not known to be cultivated in Mexico, species of the large and handsome evergreen shrub genus *Comarostaphylis*, a relative of our manzanitas, produce white, urn-shaped flowers and translucent red fruit. *Chiranthodendron pentadactylon* is a striking, small tree closely related to California's Flannel Bush (*Fremontodendron*). As is true of many species in this collection, it serves a dual function, having ornamental quality and importance in Aztec mythology. Likewise, the various *Salvia* species that have been planted together in a bed have significant medicinal value for the Mayan people, while the blue- or red-flowered species with long flowering periods are horticulturally appealing. These have the additional merit of

***Salvia involucrata* with *Cuphea aequipetala* in the right foreground. Photo by R. Anderson.**

attracting hummingbirds to their flowers. The delicate orange-flowered *Dahlia coccinea* is another striking herbaceous plant that deserves wider attention. Many of the Mexican evergreen oaks and the smaller pines are attractive, drought-tolerant trees, yet they are virtually unobtainable from commercial sources.

As the Mesoamerican collection matures, amateur and professional horticulturists will be able to see this rich array of plants in place and determine for themselves which are of sufficient potential to propagate and introduce into the trade.

## The Evolving Site

The new Mesoamerican collection has a series of messages to communicate and functions to serve, and the Elvenia J. Slosson Fund grant, supplemented by additional private donations and a grant from the Tides Foundation, has allowed the Botanical Garden to pursue those goals. Initial development was impressive as the three-acre site was cleared of unwanted invasive vegetation, surveyed in detail by a professional surveyor, and conceptually planned by Ron Lutsko, Jr. and Associates. A system of paths has been built, drip irrigation has been installed, and large numbers of plants have been placed in the ground.

The first areas to be planted already give the impression of "maturity," and, in time, as the trees on the hillside grow, the entire area will acquire a full and established look. But even in its fledgling stage, this collection offers a unique resource for the diverse audience it is designed to serve.

*Robert Ornduff is Curator, Botanical Garden, University of California, Berkeley.*